HALLIBURTON

Field Ticket

RECONCILED

Field Ticket Number:	0903385455	Field Ticket Date: Thursday, June 30, 2016	Planning Order #: NA

Bill To:
HYDRO RESOURCES
13027 CR 16
FORT LUPTON
80621

Ship To:
ECCV DI-2 WELD

LOCHBUIE
80603

Job Name:	Production Single Blend 1st: T 5/8 Longstring
Order Type:	ZOH
Well Name:	ECCV DI-2
Company Code:	1100
Customer PO No.:	NA
AFE:	
Shipping Point:	Fort Lupton CO
Sales Office:	Rocky Mountains BD
Well Type:	WATER
Well Category:	Development
Rig Name/#:	CADE 24

Material	Description	QTY	UOM	Unit Amount	Gross Amount
392189	CMT MULTIPLE STAGES BOM	1.00	JOB	0.00	0.00
2	MILEAGE FOR CEMENTING CREW *Number of Units*	20.00 1	MI	5.76 USD/1 MI	115.20
1	ZI-MILEAGE FROM NEAREST HES BASE/UNIT *Number of Units*	20.00 1	MI	9.79 USD/1 MI	195.80
16093	MSC PUMP CHARGE (1ST STAGE) ZI *FEET/METERS (FT/M)* *DEPTH*	1.00 FT 9088	EA	13,534.00 USD/1 EA	13,534.00
16	MULTIPLE STAGE CEMENTING *Number of Units*	2.00 1	STG	5,055.00 USD/1 STG	10,110.00
76400	MILEAGE CMT MTLS DEL/RET MIN *NUMEER OF TONS*	10.00 133.975	MI	3.35 USD/1 MI	4,488.16
3965	HANDLE&DUMP SVC CHRG CMT&ADDITIVES ZI *Unit of Measurement* *NUMBER OF EACH*	3,485.00 EA 1	CF	5.49 USD/1 CF	19,132.65
	First Stage				
	11.5# Tuned Spacer III				
483826	SBM CMT Tuned Spacer III	40.00	BBL	293.00 USD/1 BBL	11,720.00
100003681	CHEM BARITE BULK (SPACER) *Barite*	60.00	SK	31.07 USD/1 SK	1,864.20
	13.8# ExpandaCem				
452979	CMT ExpandaCem (TM) system Cement	302.00	SK	0.00	36,091.13
	Second Stage				
	11.5# Tuned Spacer II				
483826	SBM CMT Tuned Spacer III	40.00	BBL	293.00 USD/1 BBL	11,720.00
100003681	CHEM BARITE BULK (SPACER) *Barite*	60.00	SK	31.07 USD/1 SK	1,864.20
	13.2# ElastiCem				
450261	CMT Elast Cem © system Cement	1,900.00	SK	0.00	252,590.14
	15.8# HalCem				
452986	CMT HalCem (TM) system Cement	90.00	SK	0.00	8,491.92
	Third Stage				
	13.5# SwiftCem Primary				
452990	CMT SwiftCem (TM) system Cement.	302.30	SK	0.00	18,943.95
16092	ADDITIONAL HOURS (PUMPING EQUIPMENT) ZI *HR/DAY/WEEK/MTH/YEAR/JOB/RUN* *HOURS*	1.00 H 12	EA	1,139.00 USD/1 EA	13,668.00
101216940	CHEM Pol-E-Flake 25 lb bag	25.00	LB	8.31 USD/1 LB	207.75

HALLIBURTON

Field Ticket

RECONCILED

Field Ticket Number:	0903385455	Field Ticket Date: Thursday, June 30, 2016	Planning Order #: NA

Bill To:
HYDRO RESOURCES
13027 CR 16
FORT LUPTON
80621

Ship To:
ECCV DI-2 WELD

LOCHBUIE
80603

Job Name:	Production Single Blend 1st
Order Type:	ZOH
Well Name:	ECCV DI-2
Company Code:	1100
Customer PO No.:	NA
AFE:	
Shipping Point:	Fort Lupton, CO
Sales Office:	Rocky Mountains BD
Well Type:	WATER
Well Category:	Development
Rig Name/#:	CADE 24

Material	Description	QTY	UOM	Unit Amount	Gross Amount
	Red Dye				
45	SPEC EQUIP CHRG NO PRICE ESTABLISHED ZI	2.00	EA	160.00 USD/1 EA	320.00
			Totals	USD	403,057.10

HALLIBURTON

Field Ticket

Reconciled

Field Ticket Number:	0903368441	Field Ticket Date: Tuesday, June 21, 2016	Planning Order #: NA

Bill To:
HYDRO RESOURCES
13027 CR 18
FORT LUPTON
80621

Ship To:
ECCV DI-2 WELD

LOCHBUIE
80603

Job Name:	10 3/4" Surface
Order Type:	ZOH
Well Name:	ECCV DI-2
Company Code:	1100
Customer PO No.:	144350
AFE:	
Shipping Point:	Fort Lupton, CO
Sales Office:	Rocky Mountains BD
Well Type:	WATER
Well Category:	Development
Rig Name/#:	CADE 24

10 3/4" Surface Csg

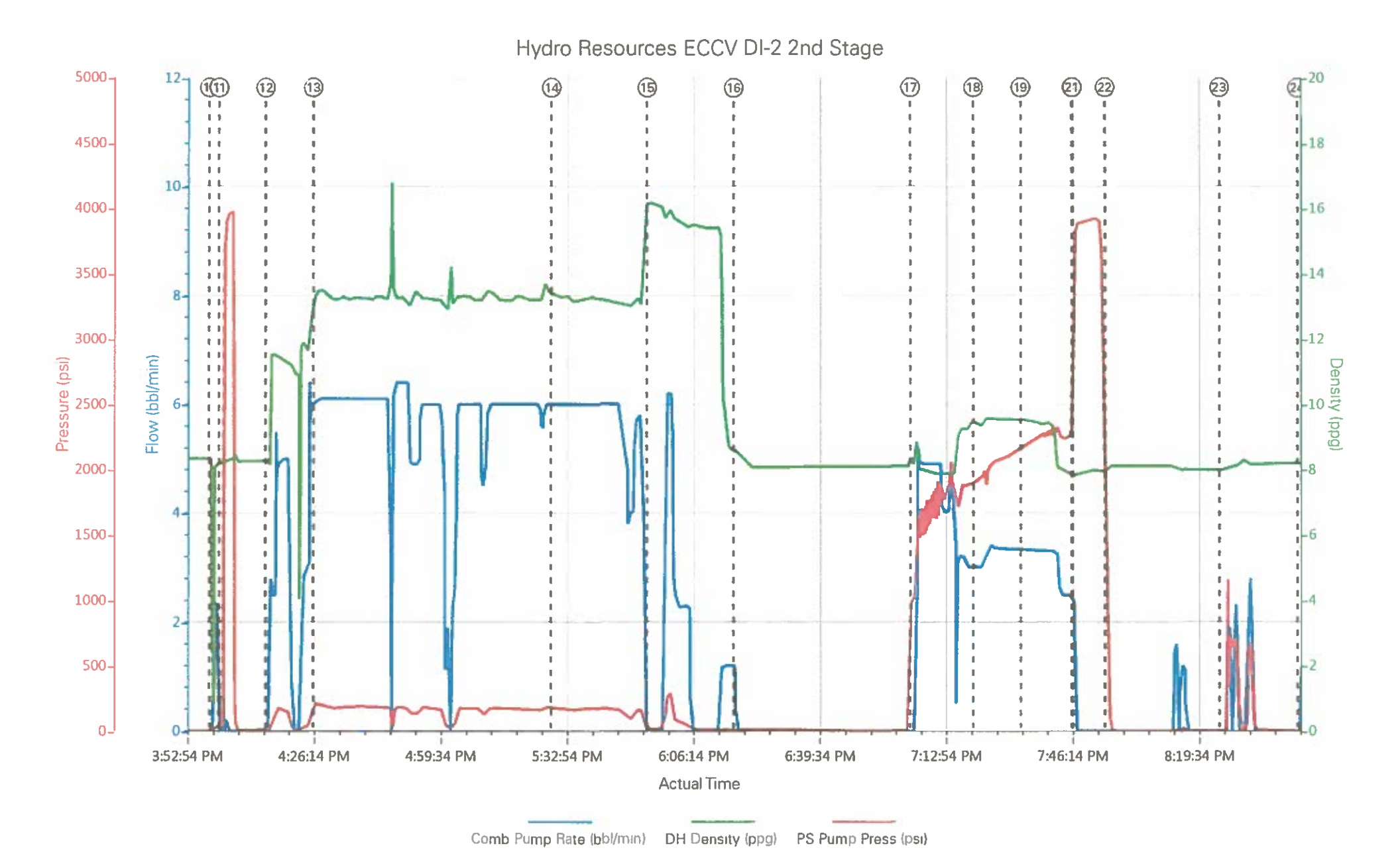
Material	Description	QTY	UOM	Unit Amount	Gross Amount
7521	CMT SURFACE CASING BOM	1.00	JOB	0.00	0.00
2	MILEAGE FOR CEMENTING CREW *Number of Units*	36.00 1	MI	5.76 USD/1 MI	207.36
1	ZI-MILEAGE FROM NEAREST HES BASE/UNIT *Number of Units*	36.00 1	MI	9.79 USD/1 MI	352.44
16091	ZI - PUMPING CHARGE *FEET/METERS (FT/M)* *DEPTH*	1.00 FT 1757	EA	5,290.00 USD/1 EA	5,290.00
76400	MILEAGE CMT MTLS DEL/RET MIN *NUMBER OF TONS*	18.00 42.38	MI	3.35 USD/1 MI	2,555.51
3965	HANDLE&DUMP SVC CHRG CMT&ADDITIVES ZI *Unit of Measurement* *NUMBER OF EACH*	915.00 EA 1	CF	5.49 USD/1 CF	5,023.35
	11.5# Tuned Spacer II				
483826	SBM, CMT, Tuned Spacer II — SPACER	40.00	BBL	293.00 USD/1 BBL	11,720.00
100003681	CHEM, BARITE, BULK *Barite*	59.00	SK	31.07 USD/1 SK	1,833.13
102068797	CHEM, D-AIR 5000, 50 LB SACK *D-AIR 5000*	10.00	LB	11.92 USD/1 LB	119.20
	13.5# SwiftCem				
452990	CMT, SwiftCem (TM) system — Cement	670.00	SK	0.00	38,250.98
	14.2# SwiftCem				
452990	CMT, SwiftCem (TM) system — Cement	110.00	SK	0.00	6,329.98
			Totals	USD	71,681.83

1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Combined Pump Rate (bbl/min)	Downhole Density (ppg)	Pass-Side Pump Pressure (psi)	Comments
Event	1	Start Job	Start Job	6/29/2016	07:51:42	COM6	0.00	8.51	-2.00	
Event	2	Test Lines	Test Lines	6/29/2016	07:55:50	COM6	0.00	8.49	35.00	@4000 psi
Event	3	Pump Spacer 1	Pump Spacer 1	6/29/2016	08:24:26	COM6	0.00	8.41	2.00	40 bbls @ 11.5 ppg, verified with scales.
Event	4	Pump Cement	Pump Cement	6/29/2016	08:34:17	COM6	3.80	13.56	63.00	302 sks (89.82 bbls) Expandacem @ 13.8 ppg, verified with scales.
Event	5	Shutdown	Shutdown	6/29/2016	08:50:26	USER	1.00	13.16	77.00	
Event	6	Drop Plug	Drop Plug	6/29/2016	08:53:20	USER	0.00	13.73	-14.00	Dropped DHT dart. verified by customer rep.
Event	7	Clean Lines	Clean Lines	6/29/2016	08:58:33	USER	2.20	13.26	-10.00	washed pumps and lines to the cellar.
Event	8	Pump Displacement	Pump Displacement	6/29/2016	09:07:55	COM6	0.00	8.47	-17.00	425 bbls mud, first 90 fresh water.
Event	9	Comment	Comment	6/29/2016	09:36:49	USER	0.00	0.00	0.00	Turned over to rig to circulate
Event	10	Start Job	Start Job	6/29/2016	15:59:28	COM6	0.00	7.95	1.00	With water supplied from day tank, water tested good to mix cement.
Event	11	Test Lines	Test Lines	6/29/2016	16:02:01	COM6	0.00	8.17	49.00	@4000 psi.
Event	12	Pump Spacer 1	Pump Spacer 1	6/29/2016	16:14:16	COM6	0.00	8.30	8.00	40 Bbls tuned spacer @ 11.5 ppg, verified with scales.
Event	13	Pump Lead Cement	Pump Lead Cement	6/29/2016	16:26:48	COM6				1900 sks, 541 bbls @ 13.2 ppg, verified with scales.

Event	14	Check Weight	Check weight	6/29/2016	17:29:33	COM6				
Event	15	Pump Tail Cement	Pump Tail Cement	6/29/2016	17:54:47	COM6	0.00	16.15	13.00	90 sks, 24 bbls, tail @ 15.8 ppg, verified with scales.
Event	16	Shutdown	Shutdown	6/29/2016	18:17:33	USER	0.00	8.57	3.00	
Event	17	Pump Displacement	Pump Displacement	6/29/2016	19:04:18	COM6				363 bbls , first 231 mud, 40 fresh water, 92 mud.
Event	18	Other	Spacer returns to surface	6/29/2016	19:20:53	COM6	3.00	9.42	1907.00	40 bbls cement to the pit.
Event	19	Other	Cement returns to surface	6/29/2016	19:33:18	COM6				39 bbls cement to the pit
Event	20	Bump Plug	Bump Plug	6/29/2016	19:46:50	COM6				@ 1500 psi over, final circulating pressure 2238
Event	21	Close Multiple Stage Cementer	Close Multiple Stage Cementer	6/29/2016	19:46:57	COM6				
Event	22	Check Floats	Check Floats	6/29/2016	19:55:33	USER	0.00	8.08	958.00	5 bbls back, floats good.
Event	23	Comment	Comment	6/29/2016	20:25:42	USER	0.00	7.97	-2.00	dropped stage cancel tool, could not get it to close tool.
Event	24	End Job	End Job	6/29/2016	20:46:13	COM6				



① Start Job 0,8.48,-2 ② Test Lines 0,8.49,35 ③ Pump Spacer 1 0,8.41,2 ④ Pump Cement 3.8,13.56,63 ⑤ Shutdown 1,13.16,77 ⑥ Drop Plug 0,13.74,-14 ⑦ Clean Lines 2.2,13.26,-10 ⑧ Pump Displacement 0,8.47,-17 ⑨ Comment 0,0,0 ⑩ Start Job 0,7.19,1.57 ⑪ Test Lines 0,8.17,49 ⑫ Pump Spacer 1 0,8.3,8 ⑬ Pump Lead Cement 6,13.46,2 ⑭ Check weight 6,13.33,173

HALLIBURTON | iCem® Service

Created: 2016-06-29 02:40:56, Version: 4.2.393 Edit

Customer : HYDRO RESOURCES
Representative : Aaron Smith
Job Date : 6/29/2016 3:21:54 PM
Sales Order # : 903385455
Well : ECCV DI-2

CADE DRILLING, LLC	MORNING REPORT	DATE 2016-06-30	RIG NO / RIG TYPE 24 ...YWORK	JOB NO 12	WELL TYPE VERTICAL
WELLNAME EECV D1-2	LEGAL DESCRIPTION SE SEC 04, T001S, R66W4		SPUD DATE / TIME 06/17/16 15:30	DAYS FR SPUD 12.60	PROJECTED TD 10240.00
OPERATOR HYDRO RESOURCES-RM INC.	COUNTY / PARISH Adams	STATE CO	JOB START DATE 06/14/16 06:00	DAYS ON JOB 16.00	EST. RELEASE 07/02/16
RIG MANAGER MICHAEL SCHELL / RIG PHONE NUMBER 719-342-9321	OPERATORS REPRESENTATIVE JOHN ASHBY	CO. MAN PH NO. 303-884-7330	RELEASE DATE / TIME	WEATHER 89 DEG 2 MPH	

OPERATIONS @ REPORT TIME: WAIT ON CEMENT/MAKE PREPERATIONS TO HOIST STACK AND INSTALL SLIPS/CUT MUD BACK

OPERATIONS NEXT 24 HRS: CIRC TOH FOR LOGS LOG HOLE TIH FOR LAY DOWN

SAFETY

ACCIDENTS OR NEAR MISSES: none	# OF JSA's 5	RIG SAFETY DAYS 14	SAFETY RATE	G.P.S. COORDINATES N 39.9982 W -104.716	BOP TEST DATE / PRESSURE 06/20/16 3000 PSI
SAFETY MEETING TOPICS: RIG UP CEMENTERS, CEMENT,RIG SER	# STOP CARDS 0	LAST MEETING DATE 06/27/16		CROWN-O-MATIC CHECKED 06/26/16 00:00	BOP DRILL DATE / TIME 06/27/16 05:30 - 48sec
LAST INSPECTION 06/24/16	INSPECTION BY / TITLE WELSCMEYER - SAFETY MAN	CREW M/U	EXTRA CREWS / WHY? / OFFICE NOTIFIED	MANHOURS PAST 24 183.75	BOP DRILL DATE / TIME 06/22/16 08:00 - 60sec

OPS

CURRENT DEPTH	FOOTAGE LAST 24	PEN. RATE	ROT HRS	MAX. GAS	BCKGR GAS	CONN. GAS	TRIP GAS	LAST CASING SIZE & SET DEPTH
	9099.00		0.00					7.63 / 9088.00

HOOKLOAD	PICKUP WEIGHT	SLACKOFF	ROTATING	ROTARY TORQUE	NEXT CASING SIZE & SET DEPTH
240.00	0.00		150.00	10000.00 - 15500.00	

MUD

Time	Mud Wt IN / OUT	Funnel Vis	PV	YLD PT	10 S GEL	10 M GEL	FL. Loss	FLT CK	HTHP FL	HTTP FC	FUEL ADDED TO MUD TODAY	CUM.

Mud Type	% SOLIDS	% LCM	% SAND	% OIL	% H2O	pH	MF	PF	CALCIUM	CHLORIDES	MUD COSTS DAILY	CUM.
						10.50						

CENTRIFUGES: | SHAKER TYPE: | SCREENS: | CHANGED: | WATER SOURCE:

RIG COSTS

	S & R	RENTAL
DAILY		
AVERAGE		
CUMULATIVE		
CUMULATIVE DAYS	539.00	539.00

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE
				PRE-TOUR SAFETY MEETING ON CEMENTING
06:00	06:30	0.50	5	CONDITION MUD & CIRCULATE
06:30	11:30	5.00	12	1ST STAGE CEMENT WITH WATER TEMP 65.2 DEG/ TEST LINES/PUMP 40 BBL SPACER @ 11.5#
				PUMP 90 BBL CEMENT @ 13.8 PPG/DROP PLUG/PUMP 90 BBL FRESH WATER FOLLOWED BY 425
				MUD/ BUMP PLUG/DROP DART/ OPEN DV TOOL
11:30	15:30	4.00	5	CONDITION MUD & CIRCULATE
15:30	18:00	2.50	12	2ND STAGE CEMENT WITH WATER TEMP 73 DEG/TEST LINES/PUMP 40 BBL SPACER @ 11.5#
				PUMP 541 BBL LEAD CEMENT @ 13.2 PPG/24 BBL TAIL @ 15.8 PPG/PUMP 231 BBL MUD THEN
				40 BBL FRESH WATER FOLLOWED BY 92 BBL MUD
				PTSM W/CO-MAN/TOOL PUSHER/RIG CREW/TOOL HAND ON NIGHTS OPERATIONS
18:00	21:00	3.00	12	CEMENT 2ND STAGE/GOT FULL RETURNS TO SURFACE AND APPROXIMATELY 100 BBLS EXCESS
				PLUG DOWN @ 800 P.M./CLEAN UP CEMENT AND RIG DOWN HALLIBURTON
21:00	06:00	9.00	13	WAIT ON CEMENT/MAKE PREPERATIONS TO HOIST STACK AND INSTALL SLIPS/CUT MUD BACK

TIME BREAKDOWN	Today	Well
1: RIG UP / DOWN		32.00
2: DRILLING		116.50
3: REAMING		13.25
4: CORING		
5: COND. & CIRC	4.50	24.50
6: TRIPS		54.75
7: LUBRICATE RIG		2.50
8: REPAIR RIG		3.00
9: CUT DRILL LINE		2.50
10: DEVIATION		
11: WIRELINE LOG		17.00
12: RUN CSG & CMNT	10.50	26.00
13: WAIT ON CEMENT	9.00	17.00
14: NIPPLE UP BOP		9.50
15: TEST BOP		6.00
16: DRILL STEM TEST		
17: PLUGBACK		
18: SQUEEZE CMNT		
19: FISHING		
20: DIR. WORK		
21:		9.50
22:		
23:		
Other		
Total Hours	24.00	336.00

BITS

BITS	SIZE	TYPE	MAKE	SERIAL #	NOZZLES	IN @	OUT @	DRILLED	HRS	CUM. HRS	CONDITION	ROP

PUMPS

Depth	GPM	PRESSURE	Pump 1 Liner	Pump 1 SPM	Pump 2 Liner	Pump 2 SPM	Pump 3 Liner	Pump 3 SPM	Pump 4 Liner	Pump 4 SPM

	TYPE	STROKE	Manufacturer	HHP	Total HRS	MAX PSI	[illegible]	KILL (SPM)
Pump 1	1600	12.00	EMSCO					
Pump 2	1600	12.00	EMSCO					
Pump 3								
Pump 4								

DRILLSTRG

SIZE	WEIGHT	GRADE	I.D.	T/J O.D.	THREAD	# JNTS	LENGTH	IN HOLE	ON RACK	REPAIRS
4.50	20.00	G-105		6.25	XH			0	0	

DRILL STRING REMARKS:

ENGINES

LOCATION	DW	PUMP #1	PUMP #2	LP #1	LP #2	AIR #1	AIR #2	[illegible]
Co. No.	C-27	C-32	C-32	50 SER	60 SER	BOGE	BOGE	MTU 12
HRS TODAY	0.00	0.00	12.00	24.00	0.00	8.00	8.00	8.00
HRS ON WELL	0.00	0.00	278.00	192.00	132.00	282.00	268.00	292.00
HRS LAST CHGE	0.00	0.00	542.00	978.00	494.00	857.00	691.00	851.00
AVERAGE KVA								

DRILLING ASSEMBLY (BHA)

NO.	DRILLING ASSEMBLY (BHA)	O.D.	I.D.	LENGTH
50	50 JTS 4" HWDP			1529.25
0	DRILL PIPE STANDS			
0	SINGLES			
	KELLY DOWN			
	TOTAL			1529.25
	WT of COLLARS / DRILLSTRING			240000.00
	HOURS SINCE LAST INSPECTION			4710.25

DEVIATION SURVEYS

DEPTH	INCL	AZM
8893.00	0.90	
8705.00	0.60	
8638.00	0.40	
8516.00	0.40	
8323.00	0.60	
8133.00	0.50	
7944.00	0.30	
7755.00	0.20	
7565.00	0.20	
7376.00	0.50	
7186.00	0.50	
6616.00	1.60	
6239.00	0.20	
6998.00	2.00	
6428.00	0.50	
6051.00	0.80	
5295.00	0.40	
5102.00	1.00	

DIRECTIONS TO: I 76 TO EXT 25 LOCHBUIE EAST OVER INTERSTATE TO FRONTAGE ROAD SOUTH 2/10 MILE EAST INTO LOC

RIG FUEL

DELIVERED TODAY	
On Hand	3444.00
Used Today	415.00
Used This Well	16700.00
Fuel Brand	RED DYED #2
DISTRIBUTOR	HILL

BOILER

	HOURS	FUEL USED
TODAY		
WELL		
BOILER #		
BLOWDOWN VOLUMES		

MUD MTR

SERIAL #	HRS LAST 24	TOTAL HRS	CUM. WELL HRS	FOOTAGE LAST 24	TOTAL FOOTAGE
1044684-10		136.20	136.20		9088.00

RENTAL ITEMS

DESCRIPTION	DAY RT	STDBY	HRLY

DEPTH DRILLED

FROM	TO	CODE	RPM	W.O.B.

REPORT REMARKS

Eric Rogers	SAFETY MEETING ON CEMENTING
Eric Rogers	SERVICED #1 PUMP,MTU,& DRAW WORKS MOTOR
Levi S Smalley	JSA'S-CEMENTING/BREAKING STACK/DEWATERING
Levi S Smalley	FRAC TANKS/WATER-500/MUD- 0
Levi S Smalley	FUEL/BT-2035/RT-1409/TOTAL-3444/USED-415
Levi S Smalley	ANN-700/ACC-2800/MAN-1450/FUNCTION C-O-M

START WELL 1600 GAL FUEL

15% primary
10% second

40.5#
10 3/4 @ 1782

7400
2400 – contingency

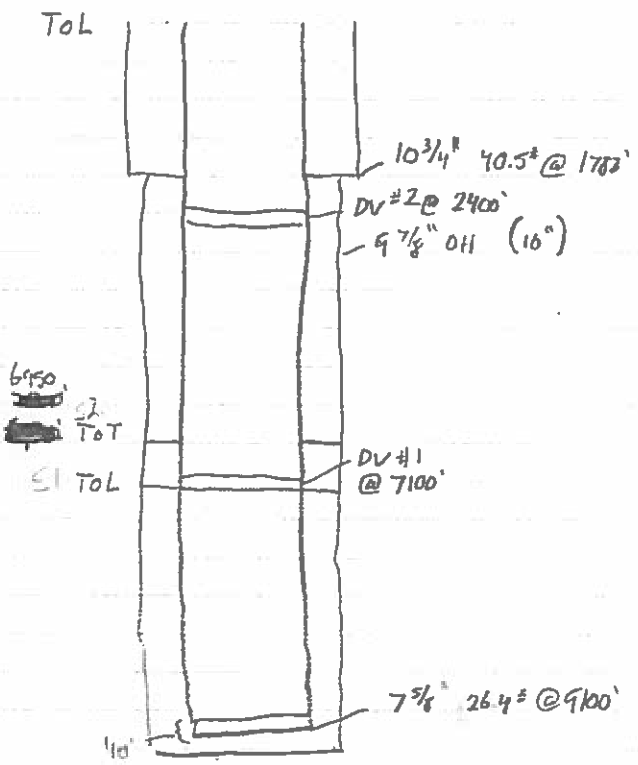
9 7/8"

OPENHOLE 1782 – 9100'
7 5/8 26.4#

7 5/8 26.4" cap
bbl/ft: .0471
ft/bbl = 21.20
ft³/ft: .2648
ft/ft³ = 3.775

cs 7 5/8 to 9 7/8 OH
bbl/ft: .0382
ft/bbl: 26.1438
ft³/ft: .2148
ft/ft³: 4.6564

cs / cs 7 5/8 to 10 3/4"
bbl/ft: .0416
ft/bbl: 24.02
ft³/ft: .2338
ft/ft³: 4.278



Stage #1 @ 9100'
2000
9100 – 7100

2000' x .0382 = 76.4 bbl
2000' x .2148 = 429.6 ft³
40' x .0471 = 1.884 bbl Shoe
40' x .2648 = 8.592 ft³ Shoe

78.284 bbl total w/o excess
~~[illegible]~~ ft³ w/o excess
438.192

Stage #2 DV @ 7100

w/o excess

150' x .0382 = 5.73 bbl tail
150' x .2148 = 32.22 ft³ tail

5.73 bbl tail
32.22 ft³ tail

5168' x .0382 = 197.4176 bbl lead
5168' x .2148 = 1110.0864 ft³ lead

271.5488 bbl lead
1526.718 ft³ lead

1782' x .0416 = 74.1312 bbl lead
1782' x .2338 = 416.6316 ft³ lead

277.2788 bbl total
1558.938 ft³ total

Stage #3 DV @ 2400'

w/o excess

618' x .0382 = 23.6076
618' x .2148 = 132.7464

1782' x .0416 = 74.1312
1782' x .2338 = 416.6316

97.7388 bbl total
549.378 ft³ total

1782
618
2400

5168
1782
6950
150
7100

STAGE 1

300 sx 13.6 @ 1,672 YIELD (15% XS OVER HOLE)
8HR WORK TIME MIN

STAGE 2

1900 sx 13.2 @ 1,57 YIELD LEAD (20% XS
90 sx 15.6 @ 1,52 YIELD TAIL

STAGE 3

450 sx 13,5 @ 1.737 YIELD (10% XS)

MAIN OFFICE
1304 South 1200 East
Vernal, Utah 84078

FRANK'S WESTATES SERVICE INC.

(435) 789-1698
Fax: (435) 789-1692
Fax: (435) 789-1007

HAL Excess Lake

I 94 20% ~~438 B~~ 78 B

II 282+22 10% 277 B
304 B

III 98 0% 98 B

496 9% 453 + NO Excess

EVANSTON, WY
105 Meadow Dr.
Evanston, WY 82930
307-789-1801

CASPER, WY
2110 Pyrite Rd.
Caper, WY 82604
307-234-1796

ROCK SPRINGS, WY
99 Reliance Rd.
Reliance, WY 82943
307-382-0930

GRAND JUNCTION, CO
2785 D Rd.
Grand Jct, CO 81504
307-382-0930

"SERVICE YOU'RE ENTITLED TO"

HALLIBURTON

HYDRO RESOURCES
13027 CR 18
FORT LUPTON, CO, 80621
US

ECCV DI-2

WELD County, CO, US

Hydro Resources Injection Well

Proposal 203383 - Version 3.0
May 24, 2016

Submitted by:
Jacob Carpenter
13100 County Road 8
Fort Lupton, CO - 80621-8345
USA

HALLIBURTON

Contents

Halliburton appreciates the opportunity to present this cost estimate and looks forward to being of service to you.

1 Foreword

Enclosed is our cost estimate for cementing the casing strings in the referenced well. The information in this cost estimate includes well data, calculations, materials requirements, and cost estimates. This cost estimate is based on information from our field personnel and previous cementing services in the area.

The selection and use of non-Halliburton plugs and casing attachments often compromises the holistic approach and may jeopardize the overall objective for effective zonal isolation. Furthermore, Halliburton is not involved in the design, manufacture or use of plugs and casing attachments supplied by other manufacturers and assumes no liability for their installation and operation. For this reason we recommend Halliburton plugs and casing attachments be used when Halliburton performs any zonal isolation operation.

Halliburton Energy Services recognizes the importance of meeting society's needs for health, safety, and protection of the environment. It is our intention to proactively work with employees, customers, the public, governments, and others to use natural resources in an environmentally sound manner while protecting the health, safety, and environmental processes while supplying high quality products and services to our customers.

We appreciate the opportunity to present this cost estimate for your consideration and we look forward to being of service to you. Our Services for your well will be coordinated through the Service Center listed below. If you require any additional information or additional designs, please feel free to contact myself or our field representative listed below.

2 Service Center Contacts

SERVICE CENTER:	Fort Lupton, CO
OPERATIONS MANAGER:	Matt Theis
SERVICE COORDINATOR:	Nicholas Wilson
TECHNICAL MANAGER:	Adam McKay

ACCT REP:	Jacob Carpenter
PHONE NUMBERS:	O: (303)655-4739
	M: (970)396-8774

3 10 3/4" Surface

3.1 Job Information 10 3/4" Surface

Job Criticality Status: GREEN
Well Name: ECCV Well #: DI-2

Surface Open Hole	0 - 1750 ft (MD)
Inner Diameter	14.75 in
Excess Factor	35 %
Surface Casing	0 - 1750 ft (MD)
Outer Diameter	10.75 in
Inner Diameter	9.95 in
Linear Weight	45.5 lbm/ft
Casing Grade	P-110
Thread Type	STC

3.2 Estimated Calculations 10 3/4" Surface

Stage 1

CEMENT: (1535 ft fill)

1535 ft * 0.5563 ft3/ft * 35 %	= 1153.18 ft3
13.5# SwiftCem Lead	= 1153.18 ft3
	= 205.4 bbl
Total Lead	= 662.40 sack

CEMENT: (215 ft fill)

215 ft * 0.5563 ft3/ft * 35 %	= 161.14 ft3
14.2# SwiftCem Tail	= 161.14 ft3
	= 28.7 bbl

Total Tail = 105.11 sack

Total Pipe Capacity:

1750 ft * 0.54 ft3/ft	= 944.96 ft3
	= 168.3 bbl

3.3 Job Volume Estimates 10 3/4" Surface

Stage 1

Fluid 1: Water Based Mud

Water Based Mud	Fluid Density:	9.8 lbm/gal
	Volume:	**0 bbl**

Fluid 2: Rheologically Enhanced Spacer

11.5 lb/gal Tuned Spacer III	Fluid Density:	11.5 lbm/gal
36.09 gal/bbl FRESH WATER	**Volume:**	**40 bbl**
0 lbm/bbl FE-2		
0 gal/bbl Musol(R) A		
0 gal/bbl Pen-5M		
0 gal/bbl Dual Spacer Surfactant B		
146.50 lbm/bbl Barite		

Fluid 3: Lead Slurry

SWIFTCEM (TM) SYSTEM	Fluid Weight:	13.5 lbm/gal
9.19 Gal/sk FRESH WATER	Slurry Yield:	1.741 ft3/sack
	Total Mixing Fluid:	9.19 Gal/sack
	Volume:	**205.4 bbl**
	Top Of Fluid:	0 ft
	Calculated Fill:	1535 ft
	Calculated sack:	662.36 sack
	Proposed sack:	670 sack

Fluid 4: Tail Slurry

SWIFTCEM (TM) SYSTEM	Fluid Weight:	14.2 lbm/gal
7.63 Gal/sk FRESH WATER	Slurry Yield:	1.533 ft3/sack
	Total Mixing Fluid:	7.63 Gal/sack
	Volume:	**28.7 bbl**
	Top Of Fluid:	1535 ft
	Calculated Fill:	215 ft
	Calculated sack:	105.11 sack
	Proposed sack:	110 sack

Fluid 5: Water Based Mud

Mud Displacement	Fluid Density:	9.8 lbm/gal
	Volume:	**168.3 bbl**

3.4 Volume Estimate Table 10 3/4" Surface

Calculations are used for volume estimation. Well conditions will dictate final cement job design.

Stage 1

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate	Downhole Volume
1	MUD	Water Based Mud	9.8		0 bbl
2	SPACER	11.5 lb/gal Tuned Spacer III	11.5		40 bbl
3	CEMENT	13.5# SwiftCem Lead	13.5		670 sack
4	CEMENT	14.2# SwiftCem Tail	14.2		110 sack
5	MUD	Mud Displacement	9.8		168.3 bbl

NOTE: These slurries and spacers will require lab testing. The additives and concentrations are estimates based on field experience in the area and may need to be modified prior to the job. The proposed spacer is designed to be generally compatible with water base mud systems. Compatibility testing with field mud samples used may indicate changes in the additive package and the related costs.

3.5 Cost Estimate

Mtrl Nbr	Description	Qty	UOM	Unit Price	Gross Amt	Discount $	Net Amount
7521	**CMT SURFACE CASING BOM**	1.00	JOB	0.00	0.00		0.00
2	MILEAGE FOR CEMENTING CREW Number of Units	20.00 1	MI	5.76	115.20	92.16	23.04
1	ZI-MILEAGE FROM NEAREST HES BASE,/UNIT Number of Units	20.00 1	MI	9.79	195.80	156.64	39.16
16091	ZI - PUMPING CHARGE FEET/METERS (FT/M) DEPTH	1.00 FT 1750	EA	5,290.00	5,290.00	4,232.00	1,058.00
76400	MILEAGE,CMT MTLS DEL/RET MIN NUMBER OF TONS	10.00 42.353	MI	3.35	1,418.83	1,135.06	283.77
3965	HANDLE&DUMP SVC CHRG, CMT&ADDITIVES,ZI Unit of Measurement NUMBER OF EACH	900.00 EA 2	CF	5.49	9,882.00	7,905.60	1,976.40
11.5# Tuned Spacer II							
483826	SBM, CMT, Tuned Spacer III	40.00	BBL	293.00	11,720.00	9,493.20	2,226.80
100003681	CHEM, BARITE, BULK *Barite*	59.00	SK	31.07	1,833.13	1,484.84	348.29
13.5# SwiftCem							
452990	CMT, SwiftCem (TM) system	670.00	SK	0.00	37,552.94	31,168.93	6,384.01
14.2# SwiftCem							
452990	CMT, SwiftCem (TM) system	110.00	SK	0.00	6,213.52	5,095.09	1,118.43
	Total Gross Amount						**74,221.42**
	Total Item Discounts						**60,763.52**
	Total Net Amount	**USD**					**13,457.90**

Mtrl Nbr	Description	Qty	UOM	Unit Price	Gross Amt	Discount $	Net Amount
Optional Charge							
16092	ADDITIONAL HOURS (PUMPING EQUIPMENT), ZI HR/DAY/WEEK/MTH/YEAR/JOB/RUN HOURS	1.00 H 1	EA	1,139.00	1,139.00		**1,139.00**

Primary Plant:	Fort Lupton, CO	**Price Book Ref:**	28 - ROCKIES
Secondary Plant:	Fort Lupton, CO	**Price Date:**	3/9/2016

4 Production NeoCem Option

4.1 Job Information Production NeoCem Option

Job Criticality Status: GREEN
Well Name: ECCV Well #: DI-2

Surface Casing	0 - 1750 ft (MD)
Outer Diameter	10.75 in
Inner Diameter	9.95 in
Linear Weight	45.5 lbm/ft
Casing Grade	J-55
Thread Type	STC
Open Hole	1750 - 9150 ft (MD)
Inner Diameter	9.875 in
Excess Factor	15 %
Production Casing	0 - 9150 ft (MD)
Outer Diameter	7.625 in
Inner Diameter	6.875 in
Linear Weight	29.7 lbm/ft
Casing Grade	P-110
Thread Type	LTC
Multiple Stage Cementer	7100 ft (MD)
Multiple Stage Cementer	2400 ft (MD)
Mud Type	Water Based Mud
Mud Weight	9.2 lbm/gal

4.2 Estimated Calculations Production NeoCem Option

Stage 1

MUD: (6191 ft fill)

4441 ft * 0.2148 ft3/ft * 15 %	= 1096.71 ft3
1750 ft * 0.2229 ft3/ft * 0 %	= 390.02 ft3
Total Mud	= 1486.73 ft3
	= 264.8 bbl

SPACER: (909 ft fill)

909 ft * 0.2148 ft3/ft * 15 %	= 224.58 ft3
Total Spacer	= 224.58 ft3
	= 40 bbl

CEMENT: (2050 ft fill)

2050 ft * 0.2148 ft3/ft * 15 %	= 506.29 ft3
12.8 NeoCem	= 506.29 ft3
	= 90.2 bbl

Total Tail = 226.80 sack

Total Pipe Capacity:

1750 ft * 0.2578 ft3/ft	= 451.14 ft3
7400 ft * 0.2578 ft3/ft	= 1907.68 ft3
	= 420.1 bbl

Stage 2

CEMENT: (6700 ft fill)

4950 ft * 0.2148 ft3/ft * 15 %	= 1222.51 ft3
1750 ft * 0.2229 ft3/ft * 0 %	= 390.02 ft3
12.8# NeoCem	= 1612.53 ft3
	= 287.2 bbl
Total Lead	= 722.13 sack

CEMENT: (400 ft fill)

400 ft * 0.2148 ft3/ft * 15 %	= 98.79 ft3
15.8 HalCem Tail	= 98.79 ft3
	= 17.6 bbl

Total Tail	= 65.01 sack

Total Pipe Capacity:

1750 ft * 0.2578 ft3/ft	= 451.14 ft3
5350 ft * 0.2578 ft3/ft	= 1379.2 ft3
	= 326 bbl

Stage 3

CEMENT: (2400 ft fill)

650 ft * 0.2148 ft3/ft * 15 %	= 160.53 ft3
1750 ft * 0.2229 ft3/ft * 0 %	= 390.02 ft3
13.5# SwiftCem	= 550.55 ft3
	= 98.1 bbl

Total Tail	= 317.09 sack

Total Pipe Capacity:

1750 ft * 0.2649 ft3/ft	= 463.56 ft3
650 ft * 0.2649 ft3/ft	= 172.18 ft3
	= 113.2 bbl

4.3 Job Volume Estimates Production NeoCem Option

Stage 1

Fluid 1: Water Based Mud

Water Based Mud	Fluid Density:	9.2 lbm/gal
	Volume:	**264.8 bbl**

Fluid 2: Rheologically Enhanced Spacer

11.5 lb/gal Tuned Spacer III	Fluid Density:	11.5 lbm/gal
36.09 gal/bbl FRESH WATER	**Volume:**	**40 bbl**
0 lbm/bbl FE-2		
0 gal/bbl Musol(R) A		
0 gal/bbl Pen-5M		
0 gal/bbl Dual Spacer Surfactant B		
146.50 lbm/bbl Barite		

Fluid 3: Lead Slurry

NeoCem TM	Fluid Weight:	12.8 lbm/gal
10.53 Gal/sk FRESH WATER	Slurry Yield:	2.233 ft3/sack
	Total Mixing Fluid:	10.53 Gal/sack
	Volume:	**90.2 bbl**
	Top Of Fluid:	7100 ft
	Calculated Fill:	2050 ft
	Calculated sack:	226.73 sack
	Proposed sack:	230 sack

Fluid 4: Fresh Water

Fresh Water Displacement	Fluid Density:	8.4 lbm/gal
	Volume:	**94.1 bbl**

Fluid 5: Water Based Mud

Mud Displacement	Fluid Density:	9.2 lbm/gal
	Volume:	**326 bbl**

Multiple Stage Cementer 7100 ft(MD)

Stage 2

Fluid 1: Water Based Mud

Water Based Mud	Fluid Density:	9.2 lbm/gal
	Volume:	**0 bbl**

Fluid 2: Rheologically Enhanced Spacer

11.5 lb/gal Tuned Spacer III	Fluid Density:	11.5 lbm/gal
36.09 gal/bbl FRESH WATER	**Volume:**	**40 bbl**

0 lbm/bbl FE-2
0 gal/bbl Musol(R) A
0 gal/bbl Pen-5M
0 gal/bbl Dual Spacer Surfactant B
146.50 lbm/bbl Barite

Fluid 3: Lead Slurry

NeoCem TM	Fluid Weight:	12.8 lbm/gal
10.53 Gal/sk FRESH WATER	Slurry Yield:	2.233 ft3/sack
	Total Mixing Fluid:	10.53 Gal/sack
	Volume:	**287.2 bbl**
	Top Of Fluid:	0 ft
	Calculated Fill:	6700 ft
	Calculated sack:	722.13 sack
	Proposed sack:	730 sack

Fluid 4: Tail Slurry

HALCEM (TM) SYSTEM	Fluid Weight:	15.8 lbm/gal
6.18 Gal/sk FRESH WATER	Slurry Yield:	1.52 ft3/sack
	Total Mixing Fluid:	6.19 Gal/sack
	Volume:	**17.6 bbl**
	Top Of Fluid:	6700 ft
	Calculated Fill:	400 ft
	Calculated sack:	64.99 sack
	Proposed sack:	70 sack

Fluid 5: Fresh Water

Fresh Water Displacement	Fluid Density:	8.4 lbm/gal
	Volume:	**326 bbl**

Multiple Stage Cementer 2400 ft(MD)

Stage 3

Fluid 1: Water Based Mud

Water Based Mud	Fluid Density:	9.4 lbm/gal
	Volume:	**0 bbl**

Fluid 2: Lead Slurry

SWIFTCEM (TM) SYSTEM	Fluid Weight:	13.5 lbm/gal
9.15 Gal/sk FRESH WATER	Slurry Yield:	1.737 ft3/sack
	Total Mixing Fluid:	9.15 Gal/sack
	Volume:	**98.1 bbl**
	Top Of Fluid:	0 ft
	Calculated Fill:	2400 ft
	Calculated sack:	316.95 sack

	Proposed sack:	320 sack
Fluid 3: Fresh Water		
Fresh Water Displacement	Fluid Density:	8.4 lbm/gal
	Volume:	**113.2 bbl**

4.4 Volume Estimate Table Production NeoCem Option

Calculations are used for volume estimation. Well conditions will dictate final cement job design.

Stage 1

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate	Downhole Volume
1	MUD	Water Based Mud	9.2		264.8 bbl
2	SPACER	11.5 lb/gal Tuned Spacer III	11.5		40 bbl
3	CEMENT	12.8 NeoCem	12.8		91.5 bbl
4	MUD	Fresh Water Displacement	8.4		94.1 bbl
5	MUD	Mud Displacement	9.2		326 bbl

Stage 2

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate	Downhole Volume
1	MUD	Water Based Mud	9.2		0 bbl
2	SPACER	11.5 lb/gal Tuned Spacer III	11.5		40 bbl
3	CEMENT	12.8# NeoCem	12.8		290.3 bbl
4	CEMENT	15.8 HalCem Tail	15.8		70 sack
5	MUD	Fresh Water Displacement	8.4		326 bbl

Stage 3

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate	Downhole Volume
1	MUD	Water Based Mud	9.4		0 bbl
2	CEMENT	13.5# SwiftCem	13.5		320 sack
3	MUD	Fresh Water Displacement	8.4		113.2 bbl

NOTE: These slurries and spacers will require lab testing. The additives and concentrations are estimates based on field experience in the area and may need to be modified prior to the job. The proposed spacer is designed to be

generally compatible with water base mud systems. Compatibility testing with field mud samples used may indicate changes in the additive package and the related costs.

4.5 Cost Estimate

Mtrl Nbr	Description	Qty	UOM	Unit Price	Gross Amt	Discount $	Net Amount
392189	**CMT MULTIPLE STAGES BOM**	1.00	JOB	0.00	0.00		0.00
2	MILEAGE FOR CEMENTING CREW Number of Units	20.00 1	MI	5.76	115.20	92.16	23.04
1	ZI-MILEAGE FROM NEAREST HES BASE,/UNIT Number of Units	20.00 1	MI	9.79	195.80	156.64	39.16
16093	MSC PUMP CHARGE (1ST STAGE), ZI FEET/METERS (FT/M) DEPTH	1.00 FT 9150	EA	13,534.00	13,534.00	10,827.20	2,706.80
16	MULTIPLE STAGE CEMENTING Number of Units	2.00 1	STG	5,055.00	10,110.00	8,088.00	2,022.00
76400	MILEAGE,CMT MTLS DEL/RET MIN NUMBER OF TONS	10.00 88.12	MI	3.35	2,952.02	2,361.62	590.40
3965	HANDLE&DUMP SVC CHRG, CMT&ADDITIVES,ZI Unit of Measurement NUMBER OF EACH	2,379.00 EA 4	CF	5.49	52,242.84	41,794.27	10,448.57
First Stage							
11.5# Tuned Spacer III							
483826	SBM, CMT, Tuned Spacer III	40.00	BBL	293.00	11,720.00	9,610.40	2,109.60
100003681	CHEM, BARITE, BULK *Barite*	59.00	SK	31.07	1,833.13	1,503.17	329.96
12.8# NeoCem							
984579	SBM CEM NEOCEM™ BBL	92.00	BBL	300.00	27,600.00	22,080.00	5,520.00
Second Stage							
11.5#Tuned Spacer III							
483826	SBM, CMT, Tuned Spacer III	40.00	BBL	293.00	11,720.00	9,610.40	2,109.60
100003681	CHEM, BARITE, BULK *Barite*	59.00	SK	31.07	1,833.13	1,503.17	329.96
12.8# NeoCem							
984579	SBM CEM NEOCEM™ BBL	291.00	BBL	300.00	87,300.00	69,840.00	17,460.00
15.8# HalCem Tail							
452986	CMT, HalCem (TM) system	70.00	SK	0.00	7,097.23	5,819.72	1,277.51
Third Stage							
13.5# SwiftCem							
452990	CMT, SwiftCem (TM) system	320.00	SK	0.00	17,833.51	14,801.82	3,031.69
	Total Gross Amount						**246,086.86**
	Total Item Discounts						**198,088.57**
	Total Net Amount	**USD**					**47,998.29**

Mtrl Nbr	Description	Qty	UOM	Unit Price	Gross Amt	Discount $	Net Amount
Optional Charge							
16092	ADDITIONAL HOURS (PUMPING EQUIPMENT), ZI HR/DAY/WEEK/MTH/YEAR/JOB/RUN HOURS	1.00 H 1	EA	1,139.00	1,139.00		**1,139.00**

Primary Plant:	Fort Lupton, CO	**Price Book Ref:**	28 - ROCKIES
Secondary Plant:	Fort Lupton, CO	**Price Date:**	3/9/2016

5 Production Single Blend 1st

5.1 Job Information Production Single Blend 1st

Job Criticality Status: GREEN
Well Name: ECCV Well #: DI-2

Surface Casing	0 - 1750 ft (MD)
Outer Diameter	10.75 in
Inner Diameter	9.95 in
Linear Weight	45.5 lbm/ft
Casing Grade	J-55
Thread Type	STC
Open Hole	1750 - 9150 ft (MD)
Inner Diameter	9.875 in
Excess Factor	15 %
Intermediate Casing	0 - 9150 ft (MD)
Outer Diameter	7.625 in
Inner Diameter	6.875 in
Linear Weight	29.7 lbm/ft
Casing Grade	P-110
Thread Type	LTC
Multiple Stage Cementer	7100 ft (MD)
Multiple Stage Cementer	2400 ft (MD)
Mud Type	Water Based Mud
Mud Weight	9.2 lbm/gal

5.2 Estimated Calculations Production Single Blend 1st

Stage 1

MUD: (6101 ft fill)

4351 ft * 0.2148 ft3/ft * 15 %	= 1074.67 ft3
1750 ft * 0.2229 ft3/ft * 0 %	= 390.02 ft3
Total Mud	= 1464.69 ft3
	= 260.9 bbl

SPACER: (909 ft fill)

909 ft * 0.2148 ft3/ft * 15 %	= 224.58 ft3
Total Spacer	= 224.58 ft3
	= 40 bbl

CEMENT: (2139 ft fill)

2139 ft * 0.2148 ft3/ft * 15 %	= 528.33 ft3
13.8# Primary ExpandaCem	= 528.33 ft3
	= 94.1 bbl

Total Tail = 315.99 sack

Total Pipe Capacity:

1750 ft * 0.2649 ft3/ft	= 463.56 ft3
7400 ft * 0.2649 ft3/ft	= 1960.2 ft3
	= 431.7 bbl

Stage 2

CEMENT: (6600 ft fill)

4850 ft * 0.2148 ft3/ft * 15 %	= 1197.81 ft3
1750 ft * 0.2229 ft3/ft * 0 %	= 390.02 ft3
13.2# ElastiCem Lead	= 1587.83 ft3
	= 282.8 bbl
Total Lead	= 1011.34 sack

CEMENT: (500 ft fill)

500 ft * 0.2148 ft3/ft * 15 %	= 123.49 ft3
15.8 HalCem Tail	= 123.49 ft3
	= 22 bbl

Total Tail	= 81.26 sack

Total Pipe Capacity:

1750 ft * 0.2649 ft3/ft	= 463.56 ft3
5350 ft * 0.2649 ft3/ft	= 1417.17 ft3
	= 335 bbl

Stage 3

CEMENT: (2400 ft fill)

650 ft * 0.2148 ft3/ft * 15 %	= 160.53 ft3
1750 ft * 0.2229 ft3/ft * 0 %	= 390.02 ft3
13.5# SwiftCem	= 550.55 ft3
	= 98.1 bbl

Total Tail	= 317.09 sack

Total Pipe Capacity:

1750 ft * 0.2649 ft3/ft	= 463.56 ft3
650 ft * 0.2649 ft3/ft	= 172.18 ft3
	= 113.2 bbl

5.3 Job Volume Estimates Production Single Blend 1st

Stage 1

Fluid 1: Water Based Mud

Water Based Mud	Fluid Density:	9.2 lbm/gal
	Volume:	**260.9 bbl**

Fluid 2: Rheologically Enhanced Spacer

11.5 lb/gal Tuned Spacer III	Fluid Density:	11.5 lbm/gal
36.09 gal/bbl FRESH WATER	**Volume:**	**40 bbl**
0 lbm/bbl FE-2		
0 gal/bbl Musol(R) A		
0 gal/bbl Pen-5M		
0 gal/bbl Dual Spacer Surfactant B		
146.50 lbm/bbl Barite		

Fluid 3: Lead Slurry

EXPANDACEM (TM) SYSTEM	Fluid Weight:	13.8 lbm/gal
7.71 Gal/sk FRESH WATER	Slurry Yield:	1.672 ft3/sack
	Total Mixing Fluid:	7.71 Gal/sack
	Volume:	**94.1 bbl**
	Top Of Fluid:	7011 ft
	Calculated Fill:	2139 ft
	Calculated sack:	315.99 sack
	Proposed sack:	320 sack

Fluid 4: Fresh Water

Fresh Water Displacement	Fluid Density:	8.4 lbm/gal
	Volume:	**151 bbl**

Fluid 5: Water Based Mud

Mud Displacement	Fluid Density:	9.2 lbm/gal
	Volume:	**280.7 bbl**

Multiple Stage Cementer 7100 ft(MD)

Stage 2

Fluid 1: Water Based Mud

Water Based Mud	Fluid Density:	9.2 lbm/gal
	Volume:	**0 bbl**

Fluid 2: Rheologically Enhanced Spacer

11.5 lb/gal Tuned Spacer III	Fluid Density:	11.5 lbm/gal
36.09 gal/bbl FRESH WATER	**Volume:**	**40 bbl**

0 lbm/bbl FE-2
0 gal/bbl Musol(R) A
0 gal/bbl Pen-5M
0 gal/bbl Dual Spacer Surfactant B
146.50 lbm/bbl Barite

Fluid 3: Lead Slurry

ELASTICEM (TM) SYSTEM	Fluid Weight:	13.2 lbm/gal
6.94 Gal/sk FRESH WATER	Slurry Yield:	1.57 ft3/sack
	Total Mixing Fluid:	7.51 Gal/sack
	Volume:	**282.8 bbl**
	Top Of Fluid:	0 ft
	Calculated Fill:	6600 ft
	Calculated sack:	1011.35 sack
	Proposed sack:	1020 sack

Fluid 4: Tail Slurry

HALCEM (TM) SYSTEM	Fluid Weight:	15.8 lbm/gal
6.18 Gal/sk FRESH WATER	Slurry Yield:	1.52 ft3/sack
	Total Mixing Fluid:	6.19 Gal/sack
	Volume:	**22 bbl**
	Top Of Fluid:	6600 ft
	Calculated Fill:	500 ft
	Calculated sack:	81.24 sack
	Proposed sack:	90 sack

Fluid 5: Fresh Water

Fresh Water Displacement	Fluid Density:	8.4 lbm/gal
	Volume:	**335 bbl**

Multiple Stage Cementer 2400 ft(MD)

Stage 3

Fluid 1: Water Based Mud

Water Based Mud	Fluid Density:	9.4 lbm/gal
	Volume:	**0 bbl**

Fluid 2: Lead Slurry

SWIFTCEM (TM) SYSTEM	Fluid Weight:	13.5 lbm/gal
9.15 Gal/sk FRESH WATER	Slurry Yield:	1.737 ft3/sack
	Total Mixing Fluid:	9.15 Gal/sack
	Volume:	**98.1 bbl**
	Top Of Fluid:	0 ft
	Calculated Fill:	2400 ft
	Calculated sack:	316.95 sack

	Proposed sack:	320 sack
Fluid 3: Fresh Water		
Fresh Water Displacement	Fluid Density:	8.4 lbm/gal
	Volume:	**113.2 bbl**

5.4 Volume Estimate Table Production Single Blend 1st

Calculations are used for volume estimation. Well conditions will dictate final cement job design.

Stage 1

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate	Downhole Volume
1	MUD	Water Based Mud	9.2		260.9 bbl
2	SPACER	11.5 lb/gal Tuned Spacer III	11.5		40 bbl
3	CEMENT	13.8# Primary ExpandaCem	13.8		320 sack
4	MUD	Fresh Water Displacement	8.4		151 bbl
5	MUD	Mud Displacement	9.2		280.7 bbl

Stage 2

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate	Downhole Volume
1	MUD	Water Based Mud	9.2		0 bbl
2	SPACER	11.5 lb/gal Tuned Spacer III	11.5		40 bbl
3	CEMENT	13.2# ElastiCem Lead	13.2		1020 sack
4	CEMENT	15.8 HalCem Tail	15.8		90 sack
5	MUD	Fresh Water Displacement	8.4		335 bbl

Stage 3

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate	Downhole Volume
1	MUD	Water Based Mud	9.4		0 bbl
2	CEMENT	13.5# SwiftCem	13.5		320 sack
3	MUD	Fresh Water Displacement	8.4		113.2 bbl

NOTE: These slurries and spacers will require lab testing. The additives and concentrations are estimates based on field experience in the area and may need to be modified prior to the job. The proposed spacer is designed to be generally compatible with water base mud systems. Compatibility testing with field mud samples used may indicate changes in the additive package and the related costs.

5.5 Cost Estimate

Mtrl Nbr	Description	Qty	UOM	Unit Price	Gross Amt	Discount $	Net Amount
392189	**CMT MULTIPLE STAGES BOM**	1.00	JOB	0.00	0.00		0.00
2	MILEAGE FOR CEMENTING CREW Number of Units	20.00 1	MI	5.76	115.20	92.16	23.04
1	ZI-MILEAGE FROM NEAREST HES BASE,/UNIT Number of Units	20.00 1	MI	9.79	195.80	156.64	39.16
16093	MSC PUMP CHARGE (1ST STAGE), ZI FEET/METERS (FT/M) DEPTH	1.00 FT 9150	EA	13,534.00	13,534.00	10,827.20	2,706.80
16	MULTIPLE STAGE CEMENTING Number of Units	2.00 1	STG	5,055.00	10,110.00	8,088.00	2,022.00
76400	MILEAGE,CMT MTLS DEL/RET MIN NUMBER OF TONS	10.00 90.522	MI	3.35	3,032.49	2,425.99	606.50
3965	HANDLE&DUMP SVC CHRG, CMT&ADDITIVES,ZI Unit of Measurement NUMBER OF EACH	2,267.00 EA 4	CF	5.49	49,783.32	39,826.66	9,956.66
First Stage							
11.5# Tuned Spacer III							
483826	SBM, CMT, Tuned Spacer III	40.00	BBL	293.00	11,720.00	9,610.40	2,109.60
100003681	CHEM, BARITE, BULK *Barite*	59.00	SK	31.07	1,833.13	1,503.17	329.96
13.8# ExpandaCem							
452979	CMT, ExpandaCem (TM) system	320.00	SK	0.00	42,153.20	34,987.18	7,166.02
Second Stage							
11.5# Tuned Spacer II							
483826	SBM, CMT, Tuned Spacer III	40.00	BBL	293.00	11,720.00	9,610.40	2,109.60
100003681	CHEM, BARITE, BULK *Barite*	59.00	SK	31.07	1,833.13	1,503.17	329.96
13.2# ElastiCem							
450261	CMT, ElastiCem ® system	1,020.00	SK	0.00	102,017.51	84,674.52	17,342.99
15.8# HalCem							
452986	CMT, HalCem (TM) system	90.00	SK	0.00	9,143.07	7,497.31	1,645.76
Third Stage							
13.5# SwiftCem Primary							
452990	CMT, SwiftCem (TM) system	320.00	SK	0.00	17,833.51	14,801.82	3,031.69
	Total Gross Amount						**275,024.36**
	Total Item Discounts						**225,604.62**
	Total Net Amount	**USD**					**49,419.74**

Mtrl Nbr	Description	Qty	UOM	Unit Price	Gross Amt	Discount $	Net Amount
Optional Charge							
16092	ADDITIONAL HOURS (PUMPING EQUIPMENT), ZI HR/DAY/WEEK/MTH/YEAR/JOB/RUN HOURS	1.00 H 1	EA	1,139.00	1,139.00		**1,139.00**

Primary Plant:	Fort Lupton, CO	**Price Book Ref:**	28 - ROCKIES
Secondary Plant:	Fort Lupton, CO	**Price Date:**	3/9/2016

6 Proposal Cost Summary

Job Name	Cost
10 3/4" Surface	13,457.90
Production NeoCem Option	47,998.29
Production Single Blend 1st	49,419.74
Total Cost USD	110,875.93

7 Conditions

The cost in this analysis is good for the materials and/or services outlined within and shall be valid for 30 days from the date of this proposal. In order to meet your needs under this proposal with a high quality of service and responsive timing, Halliburton will be allocating limited resources and committing valuable equipment and materials to your area of operations. Accordingly, the discounts reflected in this proposal are available only for materials and services awarded on a first-call basis. Alternate pricing may apply in the event that Halliburton is awarded work on any basis other than as a first-call provider.

The unit prices stated in the proposal are based on our current published prices. The projected equipment, personnel, and material needs are only estimates based on information about the work presently available to us. At the time the work is actually performed, conditions then existing may require an increase or decrease in the equipment, personnel, and/or material needs. Charges will be based upon unit prices in effect at the time the work is performed and the amount of equipment, personnel, and/or material actually utilized in the work. Taxes, if any, are not included. Applicable taxes, if any, will be added to the actual invoice.

It is understood and agreed between the parties that with the exception of the subject discounts, all services performed and equipment and materials sold are provided subject to Halliburton's General Terms and Conditions contained in our current price list, (which include LIMITATION OF LIABILITY and WARRANTY provisions), and pursuant to the applicable Halliburton Work Order Contract (whether or not executed by you), unless a Master Service and/or Sales Contract applicable to the services, equipment, or materials supplied exists between your company and Halliburton, in which case the negotiated Master Contract shall govern the relationship between the parties. A copy of the latest version of our General Terms and Conditions is available from your Halliburton representative or at: http://www.halliburton.com/terms for your convenient review, and we would appreciate receiving any questions you may have about them. Should your company be interested in negotiating a Master Contract with Halliburton, our Law Department would be pleased to work with you to finalize a mutually agreeable contract. In this connection, it is also understood and agreed that Customer will continue to execute Halliburton usual field work orders and/or tickets customarily required by Halliburton in connection with the furnishing of said services, equipment, and materials.

Any terms and conditions contained in purchase orders or other documents issued by the customer shall be of no effect except to confirm the type and quantity of services, equipment, and materials to be supplied to the customer.

If customer does not have an approved open account with Halliburton or a mutually executed written contract with Halliburton, which dictates payment terms different than those set forth in this clause, all sums due are payable in cash at the time of performance of services or delivery of equipment, products, or materials. If customer has an approved open account, invoices are payable on the twentieth day after date of invoice.

Customer agrees to pay interest on any unpaid balance from the date payable until paid at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event Halliburton employs an attorney for collection of any account, customer agrees to pay attorney fees of 20% of the unpaid account, plus all collection and court costs.